

CLAIMS

1. A recording medium on which data of a video content is recorded, title information that represents a title of the video content or a title message
5 necessary for assuring the trueness of the title information being embedded as electronic watermark information in data of the video content, the title information or the title message being recorded in other than a recording area for the data of the video
10 content.
2. The recording medium as set forth in claim 1, wherein the title message is obtained from the title information using a one-directional function.
3. A recording medium producing method for
15 producing a recording medium on which data of a video content is recorded, the method comprising the steps of:
- editing the data of the video content;
embedding title information that represents a
20 title of the video content or a title message necessary for assuring the trueness of the title information as electronic watermark information in data of the video content; and
- recording the title information or the title
25 message in other than a recording area for the data of the video content.
4. The recording medium producing method as set

forth in claim 3,

wherein the title message is obtained from the title information using a one-directional function.

5. The recording medium producing method as set forth in claim 3, further comprising the step of:

causing a copyright managing server connected through a network to provide the title information.

6. A reproducing method for a recording medium on which data of a video content is recorded, title information that represents a title of the video content or a title message necessary for assuring the trueness of the title information being embedded as electronic watermark information in data of the video content, the title information or the title message being recorded in other than a recording area for the data of the video content, the method comprising the steps of:

detecting the title information or the title message recorded in other than the recording area for the data;

detecting title information or a title message embedded as the electronic watermark information;

determining whether or not the trueness of the title information or the title message detected at the first and second title information detecting steps are assured; and

restricting a reproducing operation for the recording medium when the trueness has not been assured at the determining step.

7. A reproducing apparatus for a recording medium on which data of a video content is recorded, title information that represents a title of the video content or a title message necessary for assuring the trueness of the title information being embedded as electronic watermark information in data of the video content, the title information or the title message being recorded in other than a recording area for the data of the video content, the apparatus comprising:

a first title information detecting portion for detecting the title information or the title message recorded in other than the recording area for the data;

a second title information detecting portion for detecting title information or a title message embedded as the electronic watermark information;

a determining portion for determining whether or not the trueness of the title information or the title message detected by the first and second title information detecting portions are assured; and

a controlling portion for restricting a reproducing operation for the recording medium when the trueness has not been assured by the determining portion.

8. A recording medium on which data of a video content is recorded, medium identification information and a medium revocation list being recorded on the recording medium, the medium identification information uniquely identifying each of recording mediums, the medium revocation list designating a recording medium to be revoked with at least the medium identification information or an identification message necessary for assuring the trueness of the medium identification information.

9. The recording medium as set forth in claim 8, wherein the identification message is obtained from the medium identification information using a one-directional function.

10. The recording medium as set forth in claim 8, wherein the medium identification information is successive for recording mediums and unique thereto, and

wherein the medium revocation list designates a recording medium to be revoked with the title information of the video content and the identification message.

11. The recording medium as set forth in claim 8, wherein the medium identification information is not successive for recording mediums and is unique thereto, and

wherein the medium revocation list designates a recording medium to be revoked with the medium identification information.

12. The recording medium as set forth in claim 8,
5 wherein the medium revocation list has version information.

13. The recording medium as set forth in claim 8,
wherein a device revocation list that designates a device to be revoked is also recorded.

10 14. A recording medium producing method for producing a recording medium on which data of a video content is recorded, the method comprising the steps of:

editing the data of the video content;
15 recording a medium revocation list that designates a recording medium to be revoked with at least medium identification information or an identification message, the medium identification information uniquely identifying recording mediums, the
20 identification message being necessary for assuring the trueness of the medium identification information; and
recording the medium identification information for each medium in accordance with other
than a recording method for the data of the video
25 content.

15. The recording medium producing method as set forth in claim 14,

wherein the identification message is
obtained from the medium identification information
using a one-directional function.

16. The recording medium producing method as set
5 forth in claim 14,

wherein the medium identification information
is successive for recording mediums and unique thereto,
and

wherein the medium revocation list designates
10 a recording medium to be revoked with the title
information of the video content and the identification
message.

17. The recording medium producing method as set
forth in claim 14,

15 wherein the medium identification information
is not successive for recording mediums and is unique
thereto, and

wherein the medium revocation list designates
a recording medium to be revoked with the medium
20 identification information.

18. The recording medium producing method as set
forth in claim 14,

wherein the medium revocation list has
version information.

25 19. The recording medium producing method as set
forth in claim 14,

wherein a device revocation list that

designates a device to be revoked is also recorded to the recording medium.

20. A reproducing method for a recording medium on which data of a video content is recorded, medium
5 identification information and a medium revocation list being recorded on the recording medium, the medium identification information uniquely identifying each of recording mediums, the medium revocation list designating a recording medium to be revoked with at
10 least the medium identification information or an identification message necessary for assuring the trueness of the medium identification information, the method comprising the steps of:

reading the medium identification
15 information;

reading the medium revocation list;

storing the medium identification information that has been read or the identification message of the medium identification information to a memory;

20 determining whether or not the medium identification information or the identification message that has been stored is contained in the medium revocation list; and

restricting a reproducing operation for the
25 recording medium when the determined result at the medium list determining step represents that the recording medium should be revoked.

21. The reproducing method as set forth in claim
20,

wherein the medium revocation list has
version information.

5 22. The reproducing method as set forth in claim
21, further comprising the step of:

updating the medium revocation list with a
copyright managing server connected to a device to be
restricted for its reproducing operation through a
10 network.

23. The reproducing method as set forth in claim
20,

wherein a device revocation list designating
a illegal device to be revoked is recorded on the
15 recording medium, and

wherein the reproducing method further
comprises the steps of:

reading the device revocation list;

20 storing the device revocation list that has
been read;

determining whether or not a device that is
reproducing data is contained in the device revocation
list; and

25 restricting a reproducing operation of the
device for the recording medium when the determined
result at the device list determining step represents
that the device should be revoked.

24. The reproducing method as set forth in claim
23, further comprising the step of:

5 updating the device revocation list with a
copyright managing server connected to a device to be
restricted for its reproducing operation through a
network.

25. A reproducing method for a recording medium
on which data of a video content is recorded, medium
identification information being recorded on the
10 recording medium, the medium identification information
uniquely identifying each of recording mediums, the
method comprising the steps of:

reading the medium identification
information;

15 a medium identification information storing
portion for storing the medium identification
information that has been read or an identification
message of the medium identification information to a
memory;

20 connecting a copyright managing server
through a network, receiving a medium revocation list
that designates a recording medium to be revoked with
the medium identification information or an
identification message necessary for assuring the
25 trueness of the medium identification information from
the copyright managing server, and determining whether
or not the stored medium identification information or

the stored identification message of the medium
identification information is contained in the medium
revocation list; and

5 restricting a reproducing operation for the
recording medium when the determined result at the
determining step represents that the recording medium
should be revoked.

26. The reproducing method as set forth in claim
25,

10 wherein the medium revocation list has
version information.

27. The reproducing method as set forth in claim
26, further comprising the step of:

15 updating the medium revocation list with the
copyright managing server.

28. The reproducing method as set forth in claim
25,

20 wherein a device revocation list designating
a illegal device to be revoked is recorded on the
recording medium, and

 wherein the reproducing method further
comprises the steps of:

 reading the device revocation list;

25 determining whether or not a device that is
reproducing data is contained in the device revocation
list; and

 restricting a reproducing operation of the

device for the recording medium when the determined result at the device list determining step represents that the device should be revoked.

29. The reproducing method as set forth in claim 28, further comprising the step of:

updating the device revocation list with a copyright managing server.

30. A reproducing apparatus for a recording medium on which data of a video content is recorded, the reproducing apparatus comprises:

a reading portion for reading medium identification information and a medium revocation list, the medium identification information uniquely identifying each of recording mediums, the medium revocation list designating a recording medium to be revoked with at least the medium identification information or an identification message necessary for assuring the trueness of the medium identification information;

a medium identification information storing portion for storing the medium identification information that has been read or the identification message of the medium identification information;

a determining portion for determining whether or not the stored medium identification information or the stored identification message is contained in the medium revocation list; and

a controlling portion for restricting a reproducing operation for the recording medium when the determined result at the determining step represents that the recording medium should be revoked.

5 31. The reproducing apparatus as set forth in claim 30,

 wherein the medium revocation list has version information.

10 32. The reproducing apparatus as set forth in claim 31,

 wherein the medium revocation list is updated by a copyright managing server connected to a device to be restricted for its reproducing operation through a network.

15 33. The reproducing apparatus as set forth in claim 30,

 wherein a device revocation list designating a illegal device to be revoked is recorded on the recording medium, and

20 wherein the reproducing apparatus further comprises:

 a device list reading portion for reading the device revocation list;

25 a device list storing portion for storing the device revocation list that has been read;

 a device list determining portion for determining whether or not a device that is reproducing

data is contained in the device revocation list; and
a controlling portion for restricting a
reproducing operation of the device for the recording
medium when the determined result of the device list
determining portion represents that the device should
be revoked.

34. The reproducing apparatus as set forth in
claim 33,

wherein the device revocation list is updated
by a copyright managing server connected to a device to
be restricted for its reproducing operation through a
network.

35. A reproducing apparatus for a recording
medium on which data of a video content is recorded,
the reproducing apparatus comprising:

a reading portion for reading medium
identification information uniquely identifying each of
recording mediums;

a medium identification information storing
portion for storing the medium identification
information that has been read or an identification
message of the medium identification information;

a medium list receiving portion for receiving
a medium revocation list that designates a recording
medium to be revoked with the medium identification
information or the identification message necessary for
assuring the trueness of the medium identification

information from a copyright managing server;

5 a medium list determining portion for
determining whether or not the stored medium
identification information or the stored identification
message is contained in the received medium revocation
list; and

10 a controlling portion for restricting a
reproducing operation for the recording medium when the
determined result of the medium list determining
portion represents that the recording medium should be
revoked.

36. The reproducing apparatus as set forth in
claim 35,

15 wherein the medium revocation list has
version information.

37. The reproducing apparatus as set forth in
claim 36, further comprising:

20 a medium list storing portion for storing the
received medium revocation list,

25 wherein when version information of the
stored medium revocation list is newer than version
information of the medium revocation list that the
copyright managing server has, the stored medium
revocation list is updated with the medium revocation
list that the copyright managing server has.

38. The reproducing apparatus as set forth in
claim 35,

wherein a device revocation list designating a illegal device to be revoked is recorded on the recording medium,

5 wherein the reading portion is configured to read the device revocation list, and

wherein the reproducing apparatus further comprises:

10 a device list determining portion for determining whether or not information about a device that is reproducing data is contained in the device revocation list; and

15 a controlling portion for restricting a reproducing operation of the device for the recording medium when the determined result of the device list determining portion represents that the device should be revoked.

39. The reproducing apparatus as set forth in claim 38,

20 wherein the device revocation list is updated by the copyright managing server.

40. A copyright managing method for a system of which a plurality of reproducing apparatuses and a copyright managing server authorized by a copyright supervisor are connected through a network, the
25 copyright managing method comprising the steps of:

causing each of the reproducing apparatuses to record data of a video content and reproduce data

from each recording medium on which medium
identification information that uniquely identifies the
recording medium is recorded;

causing each of the reproducing apparatuses
5 to read the medium identification information from the
recording medium and transmit an identification message
obtained from the medium identification information
using a one-directional function;

causing the copyright managing server to
10 receive the device identification information and the
identification message;

causing the copyright managing server to
determine whether or not the plurality of reproducing
apparatuses have reproduced data from the same
15 recording medium in accordance with a set of received
data; and

causing the copyright managing server to add
at least the medium identification information or the
identification information that designates the
20 recording medium to the medium revocation list when a
predetermined number of reproducing apparatuses have
reproduced the same medium identification information
from recording mediums.

41. A reproducing method for reproducing data of
25 a video content from a recording medium, signature data
with which a reproducing operation of a device that has
a predetermined mechanism is restricted until a

calendar designated by a copyright supervisor being embedded as an electronic watermark in the data of the video content, the signature data being created in accordance with time information, the reproducing method comprising the steps of:

detecting the signature data from the recording medium when the data of the video content is reproduced from the recording medium;

creating a list of signature data as calendar information with which the reproducing operation of the device having the predetermined mechanism is restricted in accordance with the detected signature data; and

restricting the reproducing operation of the device having the predetermined mechanism for a recording medium on which the signature data is recorded until a calendar designated by the copyright supervisor.

42. The reproducing method as set forth in claim 41,

wherein the list creating step is performed using a timer that cannot be easily falsified and by referencing the timer in accordance with the detected signature data so as to create the list of the signature data.

43. The reproducing method as set forth in claim 42,

wherein the timer is calibrated by a

copyright managing server connected to the device
having the predetermined mechanism through a network.

44. The reproducing method as set forth in claim
41,

5 wherein the list creating step is performed
by referencing a timer that cannot be easily falsified,
the timer being disposed in a copyright managing server
connected to the device having the predetermined
mechanism through a network so as to create the list of
10 the signature data in accordance with the detected
signature data.

45. A reproducing apparatus for reproducing data
of a video content from a recording medium, the
reproducing apparatus comprising:

15 a signature data detecting portion for
detecting signature data from the recording medium when
the data of the video content is reproduced from the
recording medium, the signature data with which a
reproducing operation of the reproducing apparatus is
20 restricted until a calendar designated by a copyright
supervisor being embedded as an electronic watermark in
the data of the video content, the signature data being
created in accordance with time information;

a list creating portion for creating a list
25 of signature data as calendar information with which
the reproducing operation of the reproducing apparatus
is restricted in accordance with the detected signature

data; and

a controlling portion for restricting the reproducing operation of the reproducing apparatus for a recording medium on which the signature data is recorded until a calendar designated by the copyright supervisor as long as the signature data is contained in the list.

46. The reproducing apparatus as set forth in claim 45,

wherein the list creating portion is configured to have a timer that cannot be easily falsified and reference the timer in accordance with the detected signature data so as to create the list of the signature data.

47. The reproducing apparatus as set forth in claim 46,

wherein the timer is calibrated by a copyright managing server connected to the reproducing apparatus through a network.

48. The reproducing apparatus as set forth in claim 45,

wherein the list creating portion is configured to reference a timer that cannot be easily falsified and that is disposed in a copyright managing server connected to the reproducing apparatus through a network so as to create the list of the signature data in accordance with the detected signature data.

49. A copyright managing method for a copyright managing system of which a plurality of reproducing apparatuses and a copyright managing server authorized by a copyright supervisor are connected through a network, the copyright managing method comprising the steps of:

embedding signature data with which a reproducing operation of each of devices that have a predetermined mechanism is restricted until a calendar designated by a copyright supervisor as an electronic watermark in a video content, the signature data being created in accordance with time information;

causing each of the devices to detect the signature data and create a list of the signature data as calendar information with which the reproducing operation of the device is restricted in accordance with the detected signature data; and

restricting the reproducing operation of the device for a recording medium on which the signature data is recorded until a calendar designated by the copyright supervisor as long as the signature data is contained in the list.

50. The copyright managing method as set forth in claim 49,

wherein the signature list of the device is updated by the copyright managing server.